DRAFT
ENVIRONMENTAL ASSESSMENT

MOUNDS CREEK CULVERT TRASH RACK
PULASKI COUNTY, ILLINOIS

INTRODUCTION

The U.S. Army Corps of Engineers, Memphis District, has prepared this environmental assessment (EA) to evaluate potential impacts associated with installing a trash rack in front of a culvert through the levee/road near Mound City, Illinois. The creek side slopes and bottom will be protected with stone. The proposed work is located within Pulaski County, Illinois (Township 16 South Range 1 East Section 19). A project map, aerial photography and construction plans are included in the appendix.

This EA is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as interpreted by Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) and U.S. Army Corps of Engineers Regulation ER-200-2-2, and employs a systematic, interdisciplinary approach. The following sections include a discussion of the need, authority and impacts of alternative plans on natural and cultural resources associated with the proposed action.

ALTERNATIVES

There were three alternatives considered for this project.

Alternative 1: No Action: The no-action alternative would result in continued blockage of flow through the culvert to into the leveed floodway. Increased flooding in the immediate vicinity of the culverts would persist when logs and debris become lodged in the culvert.

Alternative 2: Install Trash Rack and Bank Protection: This alternative would involve installing a trash rack in front of the culvert to prevent logs and debris from entering the culvert during rain and other high water events. Bank protection would also be installed on both banks (as indicated on the plans) of the ditch to prevent future damage to the creek banks.

Alternative 3: Install Trash Rack: This alternative would involve installing only a trash rack in front of the culvert to prevent logs and debris from entering the culvert during rain events.

After careful consideration of all alternatives, it was determined that Alternative 1 (no action) was unacceptable since increased flooding would continue to be an issue in the vicinity of the

culvert. Alternative 3 (trash rack only) would involve installation of the trash rack only but this alternative would not provide any protection to the creek banks. Therefore, Alternative 2 (trash rack and bank protection) was selected as the preferred plan.

PROJECT DESCRIPTION

The work consists of installing a trash rack on the inlet side of the existing Mounds Creek culvert through the levee/road. In addition, the creek banks will be armored with stone, providing protection from potential damage resulting from logs and debris that may accumulate at the trash rack during increased water elevations. A total of 920 tons of riprap and 110 cubic yards of filter material will be utilized to protect the banks. The banks will be shaped to 1V:3.25H side slopes. The stone protection will be placed as shown on the plans. Additional gravel will be placed on an existing gravel road at the work area.

AUTHORITY

This project is authorized under the Flood Control Act of 15 May 1928, as amended.

NEED/PURPOSE

The trash rack will keep logs and debris from entering the culvert under the levee/road. If the trash rack is not installed, logs and debris will continue to accumulate in and near the culvert. The accumulated debris will impede/block flow to the culvert, resulting in increased flooding in the vicinity.

FLOODPLAIN MANAGEMENT

The project area lies within the Ohio and Mississippi Rivers floodplain. There is no practical alternative to constructing the project within the floodplain.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

A record search has been conducted through the Environmental Protection Agency's (EPA) EnviroMapper Web Page (http://maps.epa.gov). The EPA search engine was checked for any superfund sites, toxic releases or hazardous waste sites within, or directly adjacent to, the potential project site (see appendix). No listed HTRW sites shown should be affected by the proposed work because the closest site is location one mile south of the project area. Also, no potential HTRW sites were observed during field inspections of the project area. No additional HTRW investigations are required unless new information is revealed or HTRW is discovered

during construction.

ENVIRONMENTAL SETTING

Location

The proposed trash rack installation is located on Mounds Creek just north of Mound City in Pulaski County, Illinois. (See project area map). A culvert carries the flow from Mounds Creek under Hwy. 37 and the levee, and empties into the Ohio River.

Climate

The climate is characterized by cold winters, hot summers and generally abundant rainfall. The average daily maximum temperature is about 90 degrees Fahrenheit during summer months and about 30 degrees Fahrenheit in the winter months. The total annual rainfall is about 45 inches and is well distributed throughout the year. (SCS 1968)

State and Federal Holdings

No state holdings are located within the project area. Mound City National Cemetery is located approximately two miles south of the project area.

Soils

The Soil Survey for Pulaski County, Illinois has the project area mapped as Orthents soil type. This soil is silty and undulating. It has slopes of 1 to 5 percent. This soil is somewhat poorly drained. (http://websoils.nrcs.usda.gov/)

SOCIO-ECONOMIC SETTING

Recreation

Property located west of the project site is agricultural lands and property east of the levee/road is wooded. Except during construction, hunting and fishing activities would not be impacted by the proposed project

Navigation

N/A

Transportation

Hwy. 37 is adjacent to the proposed work area. In addition, a gravel road parallels the highway and is located between the highway and the culvert. This gravel road allows access to the culverts only; therefore, construction activities should not interfere with traffic on the highway.

Noise

Noise levels would increase only during the construction phase of the project. Since the surrounding area is agricultural lands to the west and woods to the east beyond the highway, noise should not cause a permanent adverse impact.

Aesthetics

Aesthetics should not be adversely impacted as a result of this proposed activity.

Local Government Finance and Tax Revenues

Mound City is located south of the project area. Since the surrounding area is either in agricultural cropland or woods, tax revenues should not be impacted by the project.

Property Values

Local property values could increase by preventing or reducing flooding in the immediate vicinity; thus increasing crop yield.

Public Services and Facilities

The work area is located north of Mound City. The only public facility present is Hwy. 37 immediately adjacent to the project site. The working rights-of-way do not include this highway; therefore, this project should have no adverse impact on this public facility.
No relocations of power lines or pipelines are anticipated.

Community and Regional Growth

Since the immediate vicinity is currently in crop production and will remain so for the foreseeable future, no change in area growth is anticipated.

Employment

Since there will be no change in land use, employment opportunities are not anticipated to change as a result of this project.

SIGNIFICANT RESOURCES AND IMPACTS

Vegetation

There are 5 trees on the slope and top bank of the creek within the working right-of-way (1 hackberry, 3 red maples and 1 standing dead snag). These trees will be removed and the bank sloped. Impacts to the vegetation at the working area will be minimal.

Agricultural Lands

Most of the land in the immediate vicinity is in agricultural production. Row crops are grown in this region. No adverse impacts to agricultural land will occur; flooding should be reduced by this project.

Cultural Resources

Due to the nature and location of the proposed work, the work will not impact any cultural resources. The State Historic Preservation Officer has "no objection to the undertaking proceeding as planned" (see attached correspondence).

Wildlife Resources

Wildlife expected to inhabit the project area include raccoons, beavers, opossums, rabbits, gray and fox squirrels, mice, rats, shrews, songbirds, amphibians, reptiles, snakes, coyote, deer and waterfowl. Project-induced impacts to wildlife are expected to be minimal due to the limited construction area.

Aquatic Resources

Freshwater mussels, various fish species and benthic organisms may be present in the creek. However, any adverse impacts to aquatic species would be minimal with pre-construction conditions returning soon after completion of work.

Endangered and Threatened Species

Field Investigations did not reveal the presence of any endangered or threatened species, or their critical habitats, within or in the vicinity of the project area. In addition, no appropriate habitat for the Indiana bat (i.e., shaggy barked trees or bridges) was near this location. Memphis District has contacted the U.S. Fish and Wildlife Service (USFWS) regarding Section 7 of the Endangered Species Act.

Wetlands

The project area is located adjacent to a riparian zone along Mounds Creek. However, this proposed work will not impact these wetlands.

Air Quality

The Illinois EPA determined that the project site is an attainment area, and there are no air pollution concerns. Although the State of Illinois does not require permits for air emissions from mobile sources within attainment areas, best management practices shall be used throughout construction to minimize air pollution. No adverse impacts are expected.

Water Quality

Installation of the bank protection will meet the criteria of Nationwide Permit #13. No significant impacts to water quality would occur as a result of this project. Water quality certification has been issued by the Illinois EPA with the following conditions:

1. The bank stabilization activities shall not exceed 500 linear feet.
2. Asphalt, bituminous material and concrete with protruding material such as reinforcing bars or mesh shall not be a) used for backfill; b) placed on shorelines/streambanks; or c) placed in waters of the state.
3. Any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statues, as determined by the Illinois EPA.
4. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
5. The applicant shall consider installing bioengineering practices in lieu of structural practices of bank stabilization to minimize impacts to the lake, pond, river or stream and enhance aquatic habitat. Bioengineering techniques may include, but are not limited to a) adequately sized riprap or A-Jack structures keyed into the toe of the slope with native plantings on the banks above; b) vegetated geogrids; c) coconut fiber (coir) logs; d) live, woody vegetative cuttings, fascines or stumps; e) brush layering; and f) soil lifts.

CUMULATIVE EFFECTS

Direct construction impacts of the project would be minimal. Long-term, indirect impacts would result from the bank protection and trash rack at the culvert site. However, this would be a positive impact because the flows through the culvert would be unhindered from trash accumulation within the culvert and the banks would be protected from same. There would be no changes in the river sediment load or water quality over ambient conditions. Thus there would be no impacts regarding excess siltation or Gulf hypoxia.

The Memphis District will be installing seepage control structures along the Mississippi River

mainline levee in the immediate vicinity of the project in 2009. The impacts associated with these seepage control structures were disclosed in the Environmental Assessment for Mississippi River Levee Construction Project Seepage Control Measures in 2007. A total of 15.6 acres of wetlands spread over 225 miles of levee will be impacted by these seepage control measures. Only 0.384 acre of wetland impacts will occur within Illinois. Therefore, the cumulative effects of these two projects are insignificant.

MITIGATION

No significant adverse environmental impacts would result from this project. Therefore, no mitigation would be required for this proposed activity.

COMPLIANCE WITH REGULATIONS

Project compliance with applicable federal regulations is shown on Table 1. Review of the draft EA by appropriate agencies and individuals and a finding of no significant impact (FONSI) would bring the project into full compliance with the listed laws and regulations.

RELATIONSHIP OF PLAN TO ENVIRONMENTAL LAWS AND REGULATIONS

The relationships of the recommended plan to the requirements of environmental laws, executive orders, and other policies are presented below:

Federal Policies and Acts	Compliance Status
Archeological Resources Protection Act of 1979	1
Bald Eagle Act	1
Clean Air Act Amendments of 1977	1
Clean Water Act of 1977, as amended	1
Endangered Species Act of 1973, as amended	1
Farmland Protection Policy Act of 1984	1
Fish and Wildlife Coordination Act of 1958	1
Flood Control Act of 1946, as amended	1
Food Security Act of 1985	1
National Environmental Policy Act of 1969	2*
National Historic Preservation Act of 1966, as amended	3
River and Harbor and Flood Control Act of 1970	1
Water Resources Development Act of 1986	1
Water Resources Planning Act of 1965	1

Executive Orders

Floodplain Management (E.O. 11988)	1
Protection, Enhancement of the Cultural Environment (E.O. 11593)	1
Protection of Wetlands (E.O. 11990)	1
Invasive Species (E.O. 11332)	1

Other Federal Policies

Prime and Unique Farmlands	1
Water Resources Council, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies	1

1/ Full compliance with the policy and related regulations has been accomplished.
2/ Partial compliance with the policy and related regulations has been accomplished.
3/ Coordination is ongoing; should remains be encountered, full compliance with policy and related regulations will be accomplished.

*Full compliance will be met following public review and a Finding of No Significant Impact.

COORDINATION

United States Department of the Interior, U.S. Fish & Wildlife Service, Marion, Illinois
U.S. Environmental Protection Agency, Chicago, Illinois
Illinois Department of Natural Resources, Springfield, Illinois
Illinois State Historic Preservation Officer, Springfield, Illinois
Illinois Environmental Protection Agency, Springfield, Illinois
Absentee-Shawnee Tribe
Alabama-Quassarte Tribal Town
Cherokee Nation of Oklahoma
Chickasaw Nation of Oklahoma
Choctaw Nation of Oklahoma
Eastern Shawnee Tribe of Oklahoma
Kialegee Tribal Town
Mississippi Bank of Choctaw Indians
Muscogee (Creek) Nation
Osage Nation of Oklahoma
Otoe-Missouria Tribe of Oklahoma
Peoria Tribe

Ponca Tribe of Oklahoma
Quapaw Tribe of Oklahoma
Sac and Fox Nation of Missouri
Sac and Fox Nation of Oklahoma
Shawnee Tribe
Thopthlocco Tribal Town
Tunica-Biloxi Tribe of Louisiana
United Keetoowah Band of Cherokee Indians of Oklahoma

CITATIONS/REFERENCES

U.S. Army Corps of Engineers, Environmental Desk Reference (IWR Report 96-PS-3), Institute for Water Resources Policy and Special Studies Division, July 1996.

U.S. Army Corps of Engineers, Supplement to the Final Environmental Impact Statement Mississippi River and Tributaries Project Mississippi River Levees and Channel Improvements, 1998.

USDA, Food Security Act

USDA, Soil Conservation Service (SCS), Soil Survey of Alexander County, Illinois (July 1968).

USDA, Natural Resources Conservation Service (NRCS), Web Soil Survey for Pulaski County, Illinois.

CONCLUSION

This office has assessed the environmental impacts of the proposed action and has determined that the proposed work will have no significant impacts upon vegetation, fish, wildlife, cultural resources, or the human environment.

PREPARERS

For additional information contact:

Patricia L. Jones (biologist) at (901) 544-0705

APPENDICES

Appendix A: Project Map (Quadrangle map) & Photograph

Appendix B: Schematic Engineering Plan Drawings

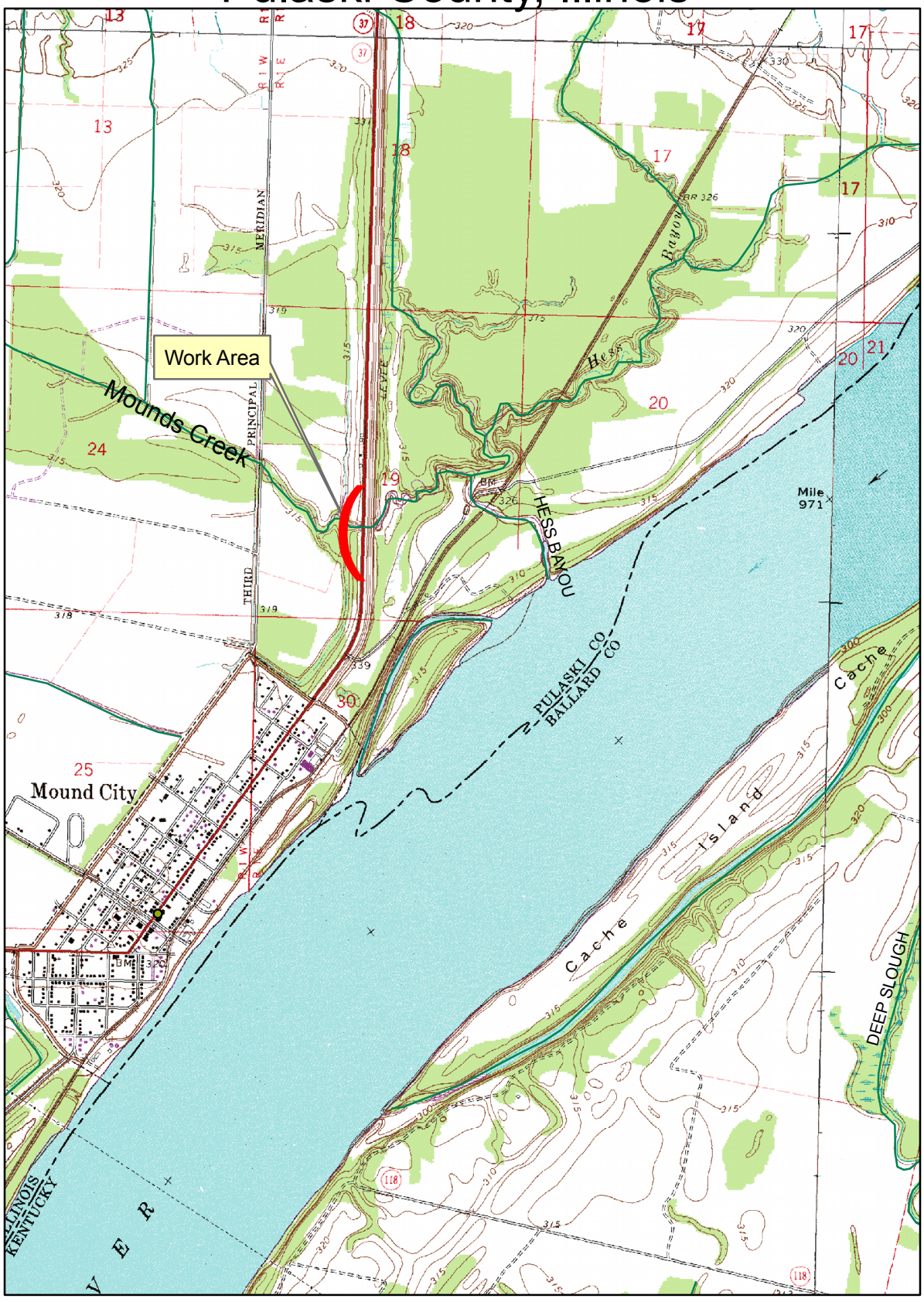
Appendix C: Soil Survey of Pulaski County, Illinois

Appendix D: EPA EnviroMapper

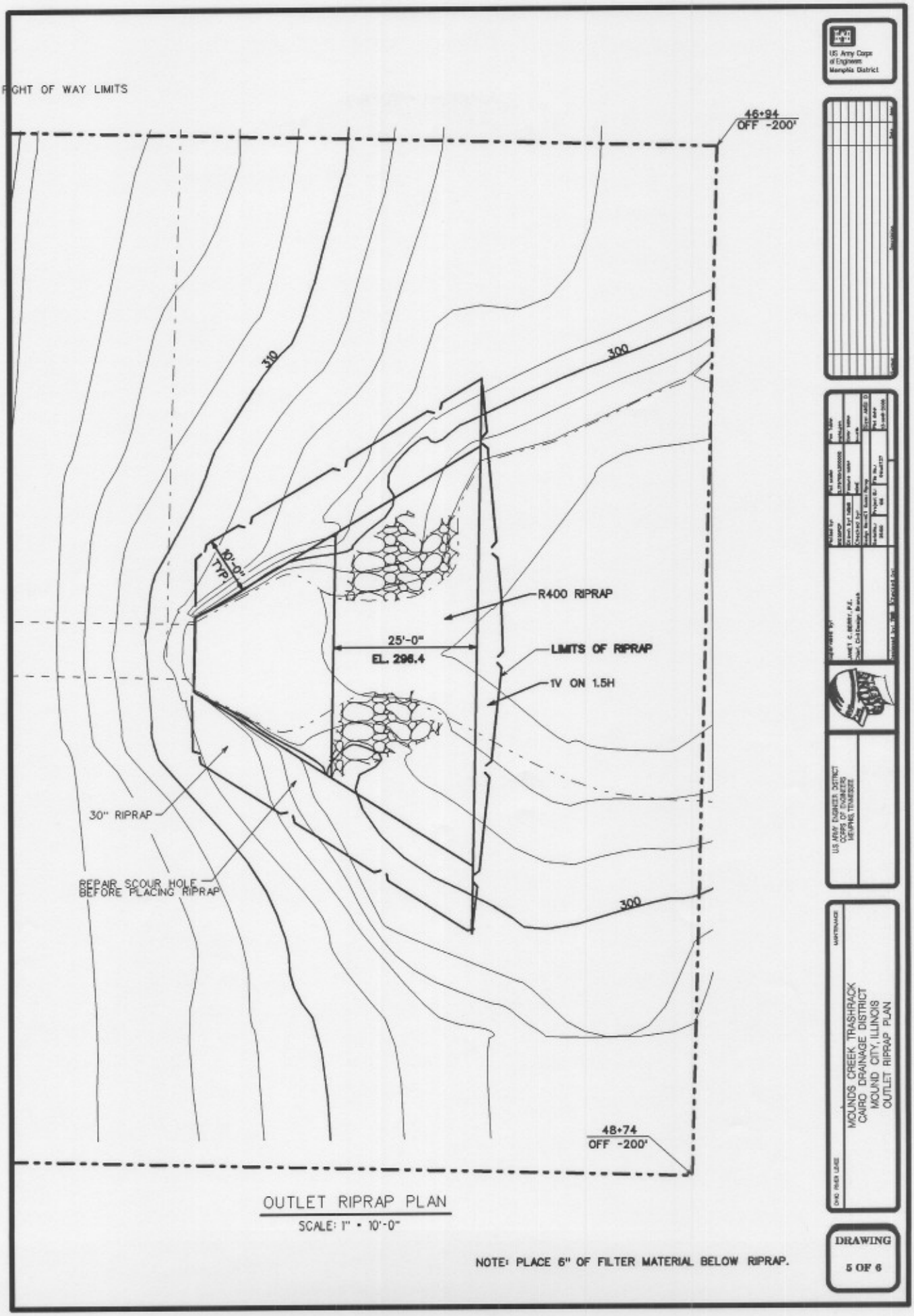
Appendix E: Correspondence

APPENDIX A

Mounds Creek Trash Rack
Pulaski County, Illinois



APPENDIX B



OUTLET RIPRAP PLAN

SCALE: 1" = 10'-0"

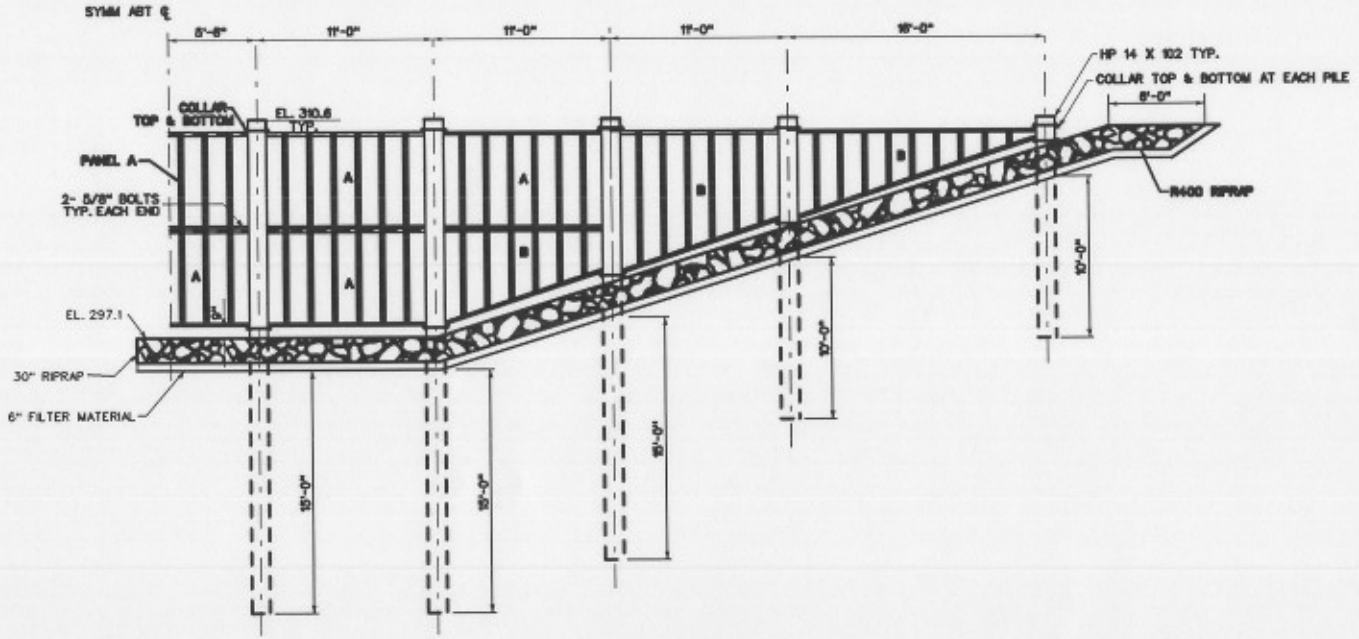
NOTE: PLACE 6" OF FILTER MATERIAL BELOW RIPRAP.

US Army Corps of Engineers
Memphis District

US ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MEMPHIS, TENNESSEE

MOUNDS CREEK TRASHRACK
CAIRO DRAINAGE DISTRICT
MOUND CITY, ILLINOIS
OUTLET RIPRAP PLAN

DRAWING
5 OF 6



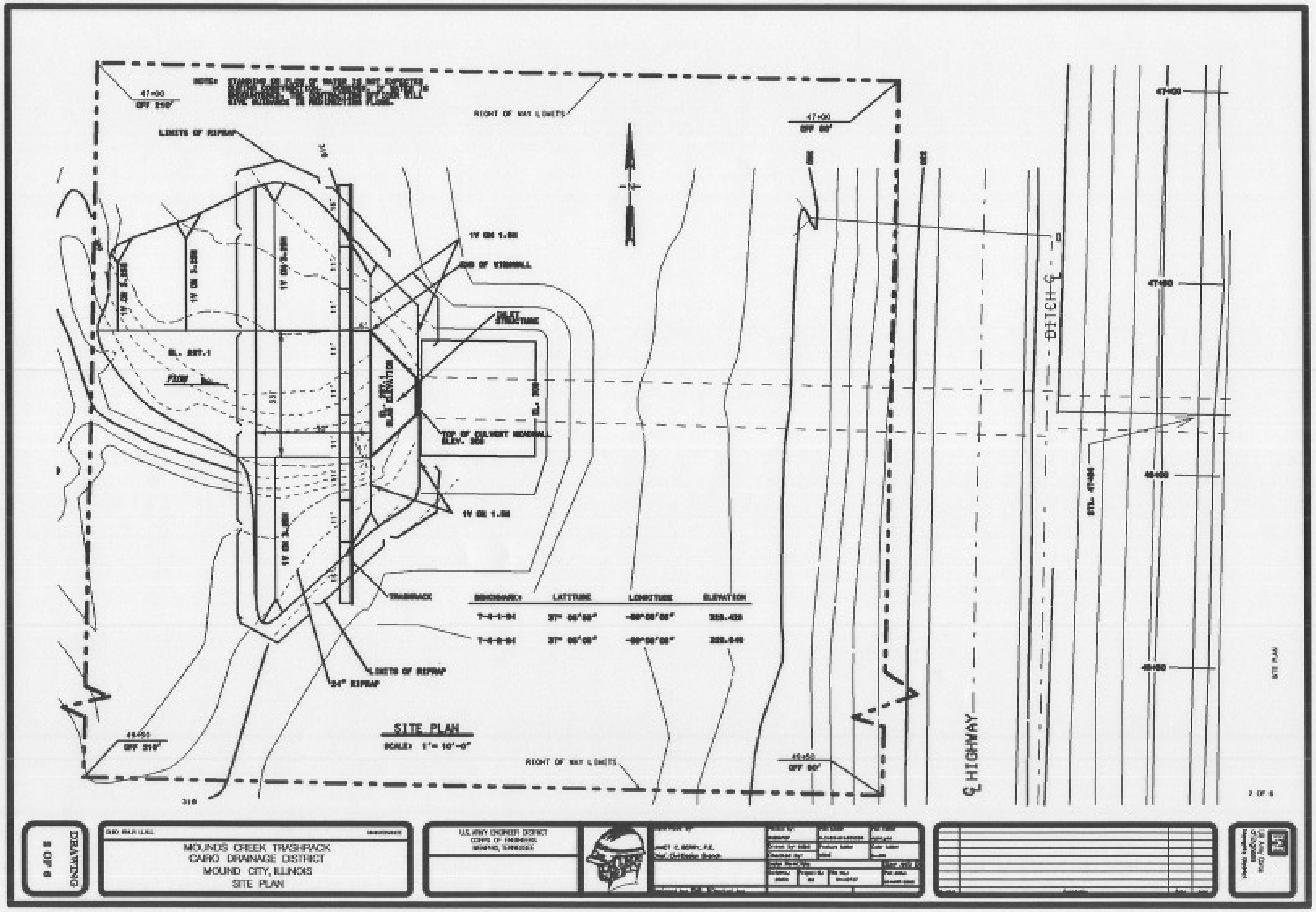
TRASH RACK ELEVATION

NOT TO SCALE

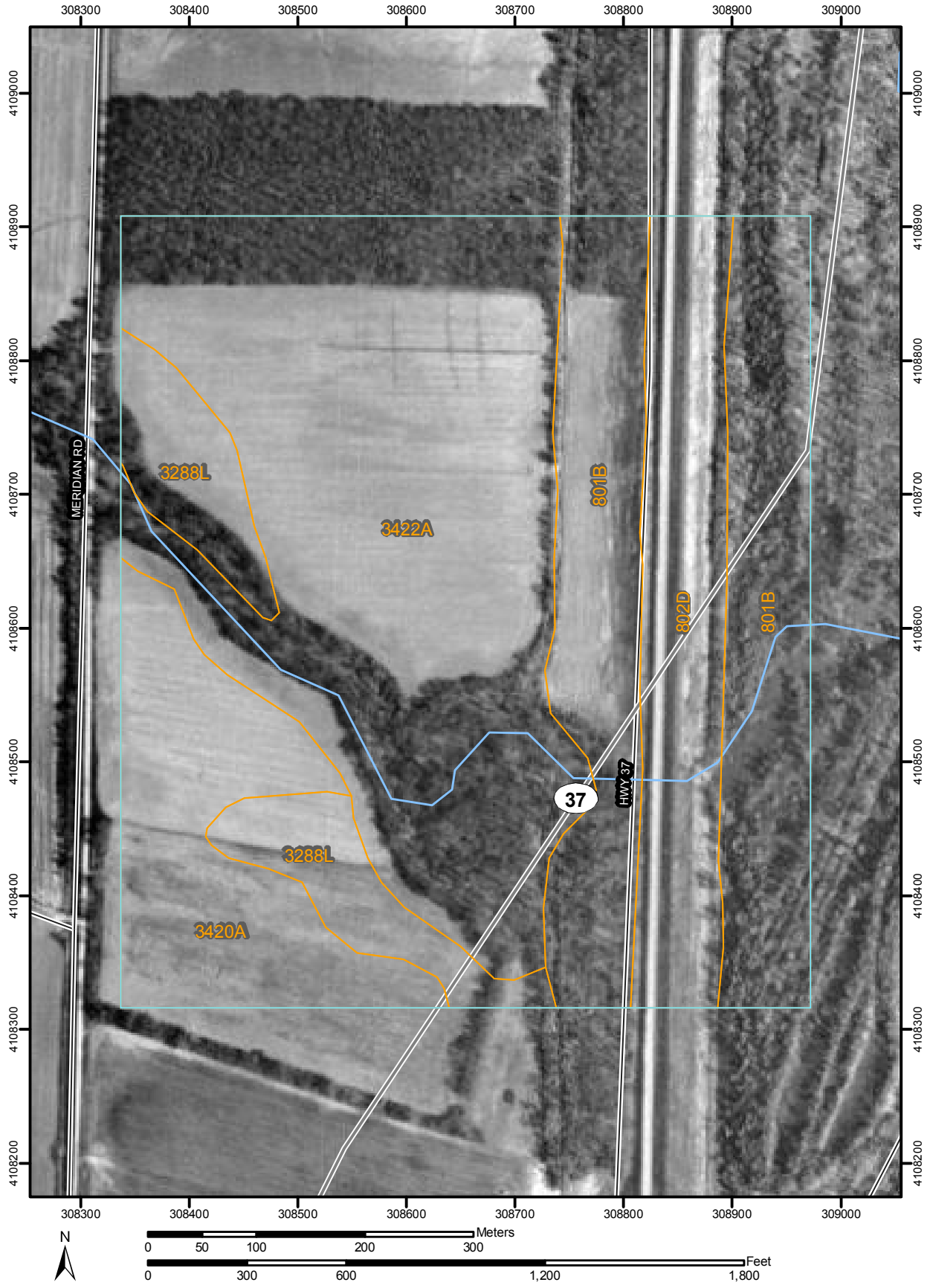
DRAWING 8 OF 8

MOUNDS CREEK TRASHRACK
CAIRO DRAINAGE DISTRICT
MOUND CITY, ILLINOIS
TRASH RACK ELEVATION

LOUISVILLE ENGINEER DISTRICT
CORPS OF ENGINEERS
MEMPHIS, TENNESSEE


RIGHT OF WAY LIMITS
LIMITS OF RIPRAP
1V ON 1.5H
END OF WINGWALL
INLET STRUCTURE
FLOW
TOP OF CULVERT HEADWALL
TRASHRACK
LIMITS OF RIPRAP
24" RIPRAP
SITE PLAN
SCALE: 1" = 10'-0"
DITCH ℄
℄ HIGHWAY
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MEMPHIS, TENNESSEE
US Army Corps of Engineers
Memphis District
MOUNDS CREEK TRASHRACK
CAIRO DRAINAGE DISTRICT
MOUND CITY, ILLINOIS
SITE PLAN
DRAWING
2 OF 6

APPENDIX C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MERIDIAN RD
3288L
3422A
801B
802D
801B
HWY 37
37
3288L
3420A
N
Meters
0 50 100 200 300
Feet
0 300 600 1,200 1,800

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pulaski County, Illinois
Survey Area Data: Version 3, Dec 30, 2006

Date(s) aerial images were photographed: 1998

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Pulaski County, Illinois (IL153)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
801B	Orthents, silty, undulating	28.2	24.6%
802D	Orthents, loamy, hilly	13.8	12.1%
3288L	Petrolia silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration	9.4	8.2%
3420A	Piopolis silty clay loam, 0 to 2 percent slopes, frequently flooded	14.7	12.8%
3422A	Cape silty clay loam, 0 to 2 percent slopes, frequently flooded	48.5	42.3%
Totals for Area of Interest (AOI)		114.5	100.0%

Information

Map Unit Description

Pulaski County, Illinois

801B—Orthents, silty, undulating

Map Unit Setting

Elevation: 340 to 1,020 feet
Mean annual precipitation: 29 to 46 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 170 to 210 days

Map Unit Composition

Orthents, silty, and similar soils: 100 percent

Description of Orthents, Silty

Setting

Landform position (three-dimensional): Interfluve, nose slope, side slope, head slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Earthy fill

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 12.0 inches)

Interpretive groups

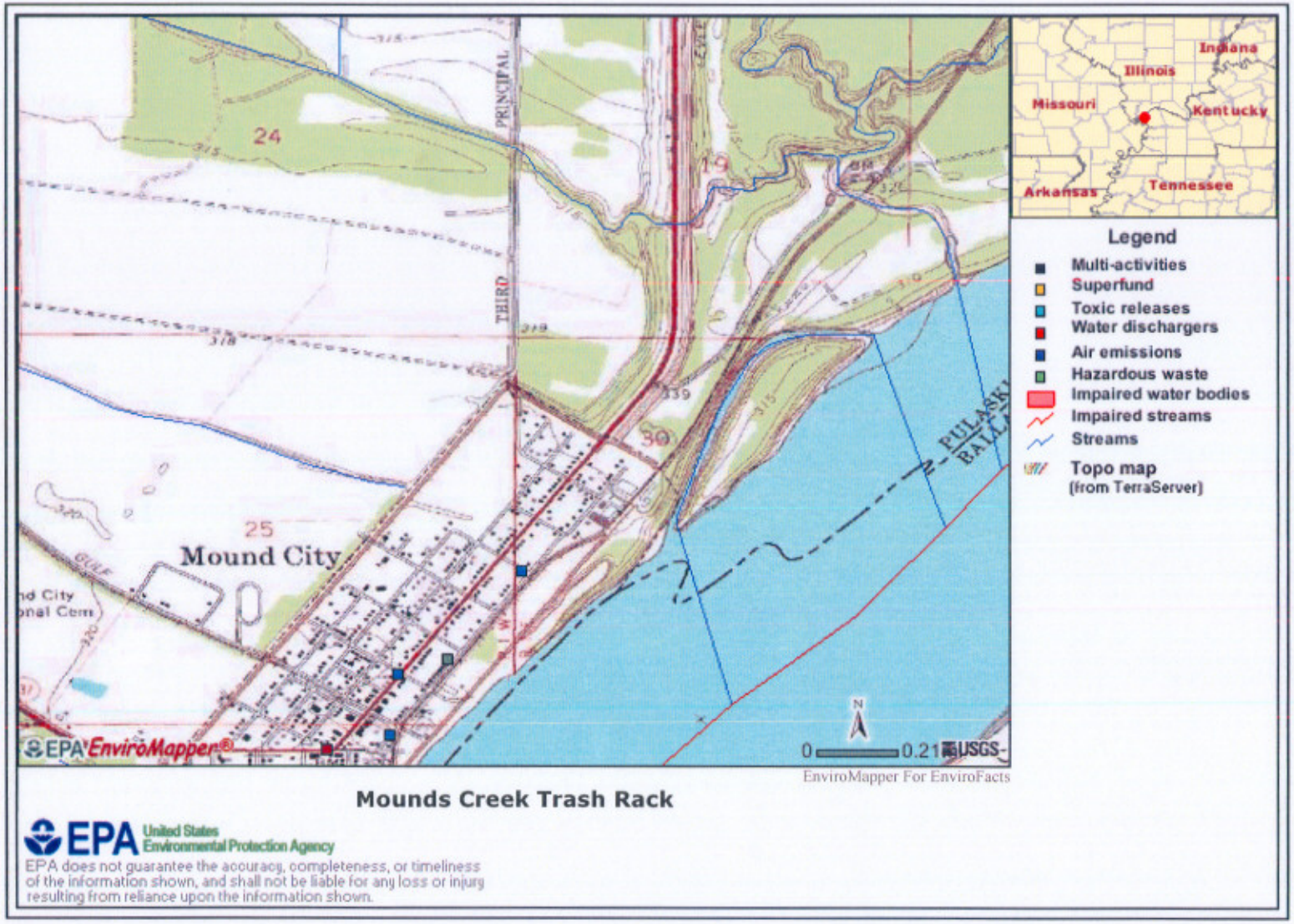
Land capability (nonirrigated): 2e

Typical profile

0 to 80 inches: Silt loam

Close

APPENDIX D



Mounds Creek Trash Rack

EPA United States Environmental Protection Agency

EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

APPENDIX E

Illinois Historic Preservation Agency

1 Old State Capitol Plaza • Springfield, Illinois 62701-1512 • www.illinois-history.gov

Pulaski County
Mound City
Route 37, NW of Old River Road
Construction of a Trash Tract

PLEASE REFER TO: IHPA LOG #021030308

March 13, 2008

Jimmy McNeil
Department of the Army
Memphis District Corps of Engineers
167 N. Main St. B-202
Memphis, TN 38103-1894

Dear Mr. McNeil:

We have reviewed the documentation submitted for the referenced project(s) in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance.

Sincerely,

Anne E. Haaker

Anne E. Haaker
Deputy State Historic
Preservation Officer

AEH

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS TN 38103-1894

Reply to
Attention of:

March 24, 2008

Planning, Programs, & Project
Management Division
Environmental Branch

Ms. Joyce Collins
U.S. Fish and Wildlife Service
8588 Route 148
Marion, Illinois 62959

Dear Ms. Collins:

The U.S. Army Corps of Engineers, Memphis District, will be installing a trash rack and bank protection in Mounds Creek as indicated on the attached map. The proposed work is shown on the enclosed plans and is located just north of Mound City in Pulaski County, Illinois.

The project consists of installation of a trash rack in front of an existing culvert through the levee/road on Mounds Creek. Bank protection will also be installed on both banks and the channel bottom in the immediate vicinity of the trash rack. Copies of the Notice of Availability, draft Environmental Assessment and draft Finding of No Significant Impact are attached.

A recent field investigation did not reveal any endangered or threatened birds, reptiles, or mammals in the vicinity of the project area. No appropriate habitat for the Indiana bat (i.e., shaggy barked trees or bridges) was near this location.

If you have any comments regarding endangered or threatened species or their critical habitat in this area, please respond by April 23, 2008. If you have any questions, contact Patricia L. Jones at (901) 544-0705.

Sincerely,

Edward P. Lambert

Edward P. Lambert
Chief, Environmental Branch

Enclosures